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Federal Communications Commission
Washington, D.C. 20554

In the Matter of:

Inquiry Regarding Carrier Current Systems
Including Broadband over Power Line Systems
ET Docket # 03-104

REPLY COMMENTS TO THOSE OF: AMPERION, INC.

By: Thomas E. Blackburn, III, P.E.

I have the following reply comments regarding certain comments submitted by Amperion, Inc., Two Tech Drive, Andover, MA, in response to the above NOI. I have listed my comments by Clause in the Amperion document.

Clause 4.3: The statement that the high frequency signals generated by the manufacturer's equipment do not pass through the distribution transformer at a significant SNR may be irrelevant. Although the BPL voltage which appears across any distribution primary voltage winding may be small, the deliberate introduction of any high-frequency voltage across (and high-frequency current through) the primary winding of a distribution transformer could conceivably contribute to unwanted ferroresonance effects in the windings and subsequent premature failure of the transformer.

Clause 4.4: In the matter of whether these devices should be classified Class A (commercial environment) or Class B (residential environment) devices: I would think that there are many instances in which medium voltage distribution lines pass within 10 meters of residential structures.

Clause 4.6: Predicted models for radiated emissions: Radiated emissions from medium voltage power lines at the frequencies in question (1.7-30MHz) have been well documented by engineers from the American Radio Relay League (ARRL) in recent tests carried out in BPL "test" communities in several eastern states. Information of these tests and supporting documentation may be found on the arrl.org web site.

(2.)

Clause 4.10: The statement “If a typical power distribution impedance (or impedances) were to be defined, it would seem reasonable to test conducted emissions only as we could predict the effective radiated power” may well be true. However, owing to differences in length and wire size used for the feeder, and the number of devices such as transformers, surge arrestors, capacitors, reclosers, fuses, connectors, etc. attached to any particular distribution feeder, any definition of a “typical” or even several “typical” distribution feeder impedances would be impossible: each feeder would have to be modeled individually; its’ impedance might change significantly as soon as a new subdivision, shopping mall or office park received service.

Clause 5.1: See above comments on Clause 4.10.

Clause 5.4: Concerning the statement “In addition, should a complaint manifest itself, Amperion technology can shift away from the offending frequency”: Please reference the (ongoing) ARRL studies mentioned in my comments on Clause 4.6. It is my understanding that commercial and military entities, as well as radio amateurs, use many “spot frequencies” in the 1.7-30MHz portion of the high-frequency spectrum. A large portion of this spectrum could conceivably be in use in close proximity to a particular distribution feeder at any time, especially by licensed services such as governmental and amateur, engaging in actual emergency communications or emergency drills.

Clause 8: I respectfully disagree with the conclusion that “Comments filed thus far..... remain unsubstantiated and speculative without direct evidence that BPL equipment causes interference in excess of approved limitations established by FCC guidelines”. Please reference ARRL studies mentioned in my comments on Clause 4.6.

Respectfully submitted,

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